

What is claimed is:

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1.

A method of manufacturing a thin film resistor with a moisture barrier comprising:  
depositing a metal film layer on a substrate; and  
depositing a layer of tantalum pentoxide film overlaying the metal film layer.

2.

The method of claim 1 wherein the step of depositing a layer of tantalum pentoxide is sputtering tantalum pentoxide film.

3.

The method of claim 1 wherein the metal film layer is an alloy containing nickel.

4.

The method of claim 1 wherein the metal film layer is an alloy containing chromium.

5.

The method of claim 1 wherein the metal film layer is a nickel-chromium alloy.

6.

The method of claim 1 further comprising:  
depositing a passivation layer overlaying the metal film layer, the tantalum pentoxide film layer overlaying the passivation layer.

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7.

A thin film resistor comprising:

a substrate;  
a metal film layer attached to the substrate; and  
a tantalum pentoxide layer overlaying the metal film layer,  
the tantalum pentoxide layer providing a barrier to  
moisture, the tantalum pentoxide layer not over layed by  
an oxidation process.

Sub  
B

*MKS*

8.

The thin film resistor of claim 7 wherein the metal film layer is an alloy containing nickel.

9.

The thin film resistor of claim 7 wherein the metal film layer is an alloy containing chromium.

10.

The thin film resistor of claim 7 wherein the metal film layer is a nickel-chromium alloy.

11.

The thin film resistor of claim 7 further comprising a passivation layer overlaying the metal film layer, the tantalum pentoxide layer overlaying the passivation layer.

12.

The thin film resistor of claim 7 wherein the tantalum pentoxide layer is overlaid by sputtering.

13.

A nickel-chromium alloy thin film resistor comprising:  
a substrate;

*Sub B*  
a nickel chromium alloy film layer attached to the substrate;  
and

a tantalum pentoxide layer overlaying the nickel-chromium alloy film layer.

14.

The nickel chromium alloy film resistor of claim 13 further comprising a passivation layer overlaying the nickel-chromium alloy film layer, the tantalum pentoxide layer overlaying the passivation layer.

*Add B3*

*Add C4*